REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 23, 26 and 27 are amended and new claims 29-44 are added. Claims 1-44 are pending in the application.

Claim 23 has been amended to address minor informalities noted during review, however, such amendment is not intended to alter the scope of the claims.

Allowable Subject Matter:

The Office Action states (p. 11, item 12) that claims 26 and 27 are allowable if rewritten in independent form to include the recitation of the base claim and any intervening claims. The amendments to claims 26 and 27 place them into independent form and include the recitation of the base claim and any intervening claims, however, the amendments to claims 26 and 27 are not intended to alter the scope of the claims. Accordingly, claims 26 and 27 are allowable over the art of record.

New Claims:

New claims 29-44 are supported at least by text appearing at p. 4, line 9, through p. 14, line 12 of the application as originally filed. No new matter is added by new claims 29-44. New claims 29-40 are similar to claim 1 et seq. but differ in scope, while new claims 41-44 are similar to claims 26-28 but differ in scope. New claims 29-44 distinguish over the art of record and are allowable.

Traverse of Art rejections:

Claims 1-25 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Silverbrook et al., U.S. Patent No. 6,443,555 (hereinafter "Silverbrook") and Hatta, Japanese Patent Application No. 07-314832 A (hereinafter "Hatta"), alone or in combination with one or more of Yonekubo, U.S. Patent Application No. US2001/0055041 A1 (hereinafter "Yonekubo"); Clark, U.S. Patent No. 6,406,126 B1 (hereinafter "Clark"); Kaneko et al., Japanese Patent Application No. 04-345878 A (hereinafter "Kaneko"); Winter et al, U.S. Patent No. 6,015,207 (hereinafter "Winter"); Shinohara et al., Japanese Patent Application No. 08-292505 A (hereinafter "Shinohara"); Suga, Japanese Patent Application No. 05-155106 A (hereinafter "Suga"); Ishida, Japanese Patent Application No. 09-286128 (hereinafter "Ishida"); Takayama et al., U.S. Patent No. 6,222,570 B1 (hereinafter "Takayama"); or Yamada et al., Japanese Patent Application No. JP 2001097612A (hereinafter "Yamada"). Applicant traverses and requests reconsideration.

Silverbrook discloses "A pagewidth inkjet printer including: a printhead assembly having an elongate pagewidth array of inkjet nozzles, chambers and thermal bend actuators formed using MEMS techniques; wherein the array extends at least 36 inches (914 mm) in length; and, the printhead assembly being constructed and arranged such that adequate heat dissipation occurs at equilibrium operating conditions without a forced heat exchange system." (Abstract). As such, Silverbrook is primarily concerned with design of the inkjet assembly for **high speed** printing.

Silverbrook is completely silent with respect to paper curl or double sided printing. Accordingly, Silverbrook does not even recognize the problem to be solved and thus cannot provide motivation or suggestion as to potential solutions to the problems addressed by Applicant's disclosure.

Hatta discloses a journal printer (Title). Hatta states that the principal objective is to take up a roll paper on a take-up spool such that the outside face of the roll paper is in a white state by mounting a printer roll paper on the take-up spool with its printed face inside. (Abstract; Purpose).

In contrast, Applicant's claim 1 recites "A method of removing roll-set curl in a print medium rolled on a core utilizing a large format printer equipped with a take up reel ("TUR"), said method comprising the steps of: activating a TUR having a core; loading said rolled print medium into said large format printer; advancing said rolled print medium through said large format printer until a front edge of said rolled print medium is adjacent to said TUR; attaching said front edge of said rolled print medium to said core of said TUR, such that a surface to be printed upon of said rolled print medium faces said core of said TUR; and rotating said core of said TUR in a direction substantially opposite a direction of said rolled print medium on said core to substantially wind said rolled print medium on to said core of said TUR", which is not taught, disclosed, suggested or motivated by the cited references.

Applicant's claim 10 recites "A method of printing on both sides of a print medium rolled on a core utilizing a large format printer equipped with a take up reel ("TUR"), said method comprising the steps of: activating a TUR

having a first core; loading said rolled print medium into said large format printer; sending a plot stream to said large format printer; printing said plot stream onto a first surface of said rolled print medium; advancing said rolled print medium through said large format printer until a front edge of said rolled print medium is adjacent to said TUR; attaching said front edge of said rolled print medium to said first core of said TUR, such that a surface to be printed upon of said rolled print medium faces said first core of said TUR; and rotating said first core of said TUR in a direction substantially opposite a direction of said print medium roll to substantially wind said rolled print medium on to said first core of said TUR", which is not taught, disclosed, suggested or motivated by the cited references.

Silverbrook and Hatta are both silent with respect to removing roll-set curl, as recited in claim 1. Silverbrook is silent with respect to any aspect of printing on both sides of a print medium, as recited in claim 10. Hatta indicates that such is possible but provides no teaching whatsoever of doing so.

Both references are silent with respect to "advancing said rolled print medium ... until a front edge of said rolled print medium is adjacent to said TUR, as affirmatively recited in both claims 1 and 10. Both references are similarly silent with respect to then "attaching said front edge of said rolled print medium to said core of said TUR".

Both references are also silent with respect to doing so "such that a surface to be printed upon of said rolled print medium faces said core of said

TUR", as affirmatively recited in both claims 1 and 10. As such, the proposed combination does not and cannot provide the claimed subject matter.

The Office Action states (p. 2, as also stated in the previous Office Action), that, with respect to Silverbrook, that "the leading edge of the paper ... must be inserted into the take-up spool in order for the printer to function." Silverbrook **still** provides no such teaching.

Silverbrook teaches that the paper may be cut as it is printed (col. 7, line 59 et seq.) and that the paper is advanced by rollers 10 and 13 (col. 6, lines 46-53). Additionally, the view of Fig. 12 shows the end of the roll of paper as it advances but shows no take-up spool. As such, Silverbrook does not support the statement in the Office Action.

The Office Action further states (pp. 2, 3) that "Hatta discloses a printer in which a print head 1 is used to print on both sides of a printing medium 4 (see last sentence of machine translation). Figures 1 and 3 of Hatta show how a take-up spool can be arranged so that both sides are printed, thus both sides of medium 4 are to be printed upon and one of the sides to be printed on will always face the take-up core."

Hatta does not disclose printing on both sides of a printing medium with a print head 1. Hatta explicitly states that Fig. 1 shows the printed side of the paper on the inside of the take-up roll (par. 16, 19) and that the outside field is in the state of a blank paper." Hatta is utterly silent as to how the "outside field" might be printed and makes no allegation at all regarding printing such with the print head 1.

Hatta states (machine translation) that Fig. 3 depicts printing according to the prior art (par. 4 - par. 7) and that "the outside field is printing side 4b". Hatta teaches (par. 9) that the prior art as shown in Figure 3 has problems since "only one side of the field is used" the costs are high, "and that has the trouble of also needing many storage space". Hatta does not teach printing both sides of the roll, as alleged, and further, combining the teachings of Hatta with the disadvantages of the prior art as taught by Hatta clearly comprises improper modification of the teachings of a reference, changes the principle of operation of the reference and renders the teachings of the reference unsuited for its intended purpose. As such, the characterization of the teachings of Hatta provided in the Office Action is both improper, as a matter of law, and inaccurate.

As noted in the Response dated January 29, 2003, the primary reference, Silverbrook, fails to disclose, teach, or suggest attaching a front edge of a rolled print medium to a core of a take up roll, such that a surface to be printed upon of the rolled print medium faces the core of the take up roll. In fact, Silverbrook is utterly silent with respect to how the printed roll is coupled to the take-up spool. Hatta is similarly silent with respect to attaching the front edge of a rolled print medium to a core of a take up roll.

It is a main intent and intended purpose of Hatta to alter a printer in such a way as to cause a roll of printed matter to be wound on a take-up spool with a printed side facing the spool and with an unprinted side facing away from the spool.

In contrast to the intended purpose of Hatta, and as noted in the Response dated January 29, 2003, Silverbrook's Fig. 26 shows winding media to a take up spool such that an unprinted surface of the media faces the core of the take up spool and such that a surface to be printed upon faces opposite of the take up spool. Thus, not only does Silverbrook not meet all of Applicant's claim recitations, Silverbrook shows the exact opposite of Applicant's claim recitations and shows precisely what Hatta labels as the problem Hatta seeks to resolve.

Hatta teaches directly away from the disclosure of Silverbrook. Further, modifying the teachings of Hatta to attempt to arrive at the subject matter of Applicant's claims 1 or 10 renders the teachings of Hatta unsuitable for their intended purpose. Accordingly, there is no motivation to modify or combine such teachings. As a result, the rejection of claims 1 and 10 is improper and should be withdrawn, and claims 1 and 10 and claims dependent therefrom should be allowed.

Suga describes (Title) a "recording apparatus". Suga teaches (Abstract, at Constitution) that "A recording head 6 and a platen-cleaning member 17 are mounted on a carriage 7 so that they can move together with the carriage. The title apparatus is so constructed that shifting can be made between a normal recording mode and a platen-cleaning mode in which the ink stuck to the surface of the platen 8 can be wiped off by moving the carriage 7 with the platen-cleaning member 17 placed, facing the platen 8".

In contrast, claim 23 recites "A method of removing roll-set curl in a print medium rolled on a core utilizing a large format printer equipped with a take up reel ("TUR"), the method comprising: turning the TUR on in a front panel of the large format printer loading the rolled print medium into the large format printer; performing one or more acts chosen from a group consisting of: turning off a nesting feature in a front panel of the large format printer, turning on an extended margins feature in a front panel of the large format printer, deactivating a color calibration feature by turning off the color calibration feature in a front panel of the large format printer and deactivating a clean platen feature by turning off the clean platen feature **in a front panel of the large format printer;** advancing the rolled print medium through the large format printer until a front edge of the rolled print medium is adjacent to the TUR; attaching the front edge of the rolled print medium to the core of the TUR, such that a surface to be printed upon of the rolled print medium faces the core of the TUR; and substantially removing roll-set curl from the rolled print medium by rotating the core of the TUR in a direction substantially opposite a direction of the rolled print medium on the core to substantially wind the rolled print medium on to the core of the TUR", which is not taught, disclosed, suggested or motivated by Silverbrook, Hatta and Suga, alone or in any proper combination.

Claim 9 recites "deactivating a clean platen feature **by turning off the clean platen feature in a front panel of said large format printer**", while claim 19 recites "deactivating a clean platen feature **prior to said rolled print**

medium loading step". Suga is completely silent regarding when or how a platen cleaning feature might be turned ON or OFF, nature of print medium or the like. As such, the proposed combination fails to provide the elements recited in any of claims 9, 19, 23 or 24 and fails to provide motivation to modify to attempt to arrive at the subject matter of such claims. Accordingly, the rejection of claims 9, 19, 23 and 24 is prima facie defective and should be withdrawn, and claims 9, 19, 23 and 24 should be allowed.

Claim 25 recites "A method of removing roll-set curl from a print medium rolled on a core utilizing a large format printer equipped with a take up reel ("TUR"), the method comprising the steps of: **activating a TUR having a first core; loading the rolled print medium into the large format printer; advancing the rolled print medium through the large format printer until a front edge of the rolled print medium is adjacent to the TUR**; attaching the front edge of the rolled print medium to the first core of the TUR; and **substantially removing roll-set curl from the rolled print medium by rotating the first core of the TUR in a direction substantially opposite a direction of the print medium roll to substantially wind the rolled print medium on to the first core of the TUR without printing on the rolled print medium**", which is not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Yamada, alone or in any proper combination.

The Office Action states (p. 10, in item 10) that "Yamada et al. teaches winding a paper sheet 20 in a printer without printing (see English abstract)." Yamada states (Abstract) that "A recording paper sheet 20 printed and fed from

a retailing register data processor 19 is wound up by means of a winding reel 2 rotationally driven by means of a winding reel driving means 11. In this way, long recording paper 20 such as a check receipt and an adjustment calculation sheet printed and fed in a checking and an adjustment calculation can be wound up, so that work in a check and an adjustment calculation can be facilitated." This passage is completely void of the teachings for which it is cited. More specifically, the windup driving means 11 and winding reel 2 are shown in Fig. 1 as being completely separate from the printer and register 19, **and are apparently incapable of removing roll-set curl because the paper 20 is wound in the same direction on both the register and the winding reel 2** (see the Figure). Clarification of the rejection is requested.

With respect to Yonekubo, Clark, Kaneko, Winter, Shinohara, Suga, Ishida, Takayama and Yamada, Applicant respectfully submits that none of these references cures the deficiencies of Silverbrook and Hatta as discussed above, and thus that claims 1-25 and 28 should be allowed over Silverbrook and Hatta in view of these references.

More specifically, Yonekubo is directed to (Title) a "Liquid jetting apparatus". Yonekubo states that (Field of the Invention, col. 1, ¶ 1): "**This invention relates to a liquid jetting apparatus** having a head member capable of jetting liquid from nozzles, such as an ink-jet recording apparatus having a recording head capable of jetting ink from nozzles to form dots on a recording medium. In particular, this invention relates to a liquid jetting apparatus wherein a liquid container for supplying liquid to nozzles is replaceable."

(emphasis added). Yonekubo teaches such in the context of a printer intended to print on **single cut sheets of conventional letter paper** (see, e.g., Fig. 1). As such, one of ordinary skill would not look to Yonekubo to address removal of roll-set curl in a large format printer.

In contrast, claim 3 recites that "activating said TUR comprises the step of **turning said TUR on** in a front panel of said large format printer", which is not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Yonekubo. Claim 16 provides analogous recitation, but depends from claim 10.

The Office Action states (p. 3) that "However, positioning of a power button on a panel of a printer is extremely well known as is shown by Figure 1 Yonekubo which shows a panel 4 with a power switch 5." This is not equivalent to what is recited in claim 3 or claim 16. Yonekubo is completely unrelated to printers having take-up reels and provides no teaching or guidance regarding turning a take-up reel on or of doing so via a front panel of a large format printer. The proposed combination fails to provide the subject matter of these claims. Further, it is inconceivable that Yonekubo could suggest or motivate the subject matter of claim 3 or claim 16. Accordingly, the rejection of claims 3 and 6 is prima facie defective and should be withdrawn, and claims 3 and 6 should be allowed.

Claim 4 recites "deactivating a nesting feature", while claim 5 depends from claim 4 and recites that the "step of deactivating said nesting feature comprises the step of turning off said nesting feature in a front panel of said

large format printer" and claim 17, which depends from claim 10, recites "deactivating a nesting feature prior to said **rolled print medium loading step**", which recitations are not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Clark.

Clark is directed to a "Multiple head inkjet printer for producing adjacent images" (Title). Clark teaches (Abstract) that "A multiple-head inkjet printer is provided for producing adjacent images on a printing medium. The inkjet printer includes a carriage, a plurality of inkjet printhead axially movable along the carriage and spaced predetermined axial distances from one another, and a printhead driver assembly for simultaneously moving each of the printheads along the carriage while maintaining the spacing distances between adjacent printheads. Each inkjet printhead is controlled by a separate image driver circuit to allow each printhead the capability of independently printing a separate image on the printing medium. The carriage has a length sufficiently greater than the width of the printing medium to allow a single one of the printheads to print a single a large image extending completely across the printing medium. The inkjet printer finds particular application in a photographic micro lab."

Clark describes a printer intended for use with **single sheets of letter-type paper** (see, e.g., Fig. 5) and thus cannot possibly provide relevance to the subject matter of claim 17 or to the context of claims 4 and 5. Clark provides no teaching whatsoever of a nesting feature. In fact, Clark is void of the word "nest". As such, it is inconceivable that Clark could suggest or motivate the

subject matter of any of claims 4, 5 or 17. Accordingly, the rejection of claims 4, 5 and 17 is prima facie defective and should be withdrawn, and claims 4, 5 and 17 should be allowed.

Claim 6 recites "activating an extended margins feature", claim 7 depends from claim 6 and recites that the "step of activating said extended margins feature comprises the step of turning on said extended margins feature in a front panel of said large format printer", while claim 18 depends from claim 10 and recites "activating an extended margins feature", which features are not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Kaneko.

Kaneko is directed to a "margin setting method for printer" (Title). Kaneko teaches (Abstract, Purpose) a method "To **enlarge selection range** of a print mode by a constitution wherein **right or left side** to be set with a margin is designated upon start of margin setting mode and then **a margin is set on the designated side**".

The Office Action states (p. 5, item 5) that "However, Kaneko et al. discloses a margin adjusting mode which allows the enlargement of a print range by adjusting left and right margins." Applicant notes that Kaneko instead teaches setting **a left margin** or **a right margin**. There is no teaching or disclosure of any "extended margins feature" or of setting such. Enlarging a selection range is not equivalent to an extended margins feature, and modification of a margin is also not the equivalent to any extended margins feature. Moreover, Kaneko explicitly teaches that the margin adjustment is set

manually (see Abstract, Constitution). As such, combining the teachings of Kaneko with those of Silverbrook and/or Hatta fails to provide the subject matter of any of claims 6, 7 or 18. Accordingly, the rejection of claims 6, 7 and 18 is in error and should be withdrawn, and claims 6, 7 and 18 should be allowed.

Claim 8 recites "deactivating a color calibration feature by turning off the color calibration feature in a front panel of said large format printer", while claim 20 recites "deactivating a color calibration feature", which recitation is not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Winter/Shinohara.

Shinohara describes an "image recorder" (Title). Shinohara states (Abstract, Purpose) that "To make a monitor and photosensitive material have the same color tone of the image and relieve an operator's feeling of incompatibility by limiting exposure value obtained by automatic photometry to be within an adjustable range and recognizing the finishing state by an image displayed on a monitor part".

The Office Action states (p. 5) that "Shinohara et al. teaches the provision of a control panel 200 on a printer for the input of color information." Shinohara provides no such teaching and provides no explanation of the purpose of the control panel 200. No mention of the control panel relative to printing is made, and the portion of the sentence following mention of the control panel 200 describes signals to a display. Clarification of the rejection is respectfully requested. The portions of Winter cited in the Office Action fail to

cure the deficiencies of Shinohara. Accordingly, the Office Action fails to make a prima facie case of unpatentability. As a result, the rejection of claims 8 and 20 is defective and should be withdrawn, and claims 8 and 20 should be allowed.

Ishida describes (Title) a "thermal journal printer". Ishida's objective is stated to be (Abstract, Problem to be Solved) to "To realize both side printing by applying a coating agent on the both sides of a thermal roll paper, and facilitate take-up both side printing by rolling the paper with a take-up spool in the direction opposite to the state before printing in a thermal journal printer."

In contrast, claim 11 recites "removing said first core of said TUR and said print medium wound on said first core; placing said first core of said TUR and said wound print medium onto a spindle of said large format printer, such that an unprinted side of said rolled print medium is positioned to be printed upon by said large format printer; and sending another plot stream to said large format printer", claim 13 recites "removing said first core of said TUR and said print medium wound on said first core; placing said first core of said TUR and said wound print medium onto a spindle of said large format printer, such that an unprinted side of said rolled print medium is positioned to be printed upon by said large format printer; placing a second core into said TUR; and winding said wound print medium from said first core to said second core", claim 14 additionally recites "removing said second core of said TUR and said print medium wound on said first core; placing said second core and said wound print medium onto said spindle of said large format printer, such that an

unprinted side of said rolled print medium is positioned to be printed upon; and sending a plot stream to said large format printer" and claim 15 yet further recites "placing a third TUR core into said TUR; attaching said front edge of said print medium to said third TUR core; and winding said print medium onto said third TUR core"", which recitations are not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Ishida.

Ishida provides no teaching whatsoever regarding a third TUR as recited in claim 15, and such is not "simply a repetition of previously recited steps" as alleged in the Office Action (p. 9, top). Fig. 1 of Ishida explicitly shows exactly one roll of thermal paper 3 and one spool 5 and no mention is made of aught else of this ilk.

Further, the Examiner admits (p. 8) that "While it is not known to the examiner if Ishida reuses a core or provides an additional core in the printing of the second side of the print media ...." and then offers the conclusion that such "would have been obvious ...." Ishida states (¶ 8) that "The thermal roll sheet 3 rolled round by the take-up spool 5 after printing of one volume of the thermal roll sheet 3 was completed is removed from a take-up spool 5, and is printed again in a field opposite to the field which was again put in the roll-sheet box 4 with the state, and was printed previously." As such, Ishida is silent with respect to any "core" as affirmatively recited in each of claims 11 and 13-15, and instead employs a roll-sheet box 4.

Ishida is directed to a way to "realize both side printing" and thus provides no motivation or suggestion for the subject matter of any of claims 11

or 13-15. Accordingly, the rejection of claims 11 and 13-15 is prima facie defective and should be withdrawn, and claims 11 and 13-15 should be allowed.

Claim 12 recites that the "plot stream sending step comprises the step of electronically switching the order of said another plot stream", which is not taught, disclosed, suggested or motivated by Silverbrook, Hatta and/or Takayama.

Takayama describes a "Thermal printing method and thermal printer" (Title). Takayama states (Abstract) that "A thermal printer has a thermal head, which applies recording heat energy to an effective recording region on a thermosensitive recording sheet. The thermal head includes an array of heating elements arranged in a main scan direction. The recording sheet is conveyed relative to the thermal head in a sub scan direction perpendicular to the main scan direction, for recording at least one input image to the recording sheet. The effective recording region is separated into an insertion region, a template region and a blank frame region. The frame region extends in a linear shape with a small width. A first borderline is defined between the insertion region and the frame region, and a second borderline is defined between the template region and the frame region. The first borderline includes at least one first borderline segment being straight or curved, extends crosswise to the sub scan direction and is inclined with reference to the main scan direction. The input image is recorded in the insertion region. At least one template image is

recorded in the template region, to constitute a synthesized image in combination with the input image."

Takayama states (Field of the Invention, col. 1, lines 6-11) that "The present invention relates to a thermal printing method and thermal printer. More particularly, the present invention relates to a thermal printing method and thermal printer in which irregularities in a recorded density are prevented from occurrence." As such, Takayama provides no teaching, disclosure, suggestion or motivation for the subject matter of claim 12.

The cited passage (col. 7, lines 36-46) relates to changing direction of a scan or subscan, and is included (in *italics*) within col. 7, line 11 through col. 9, line 47, reproduced below:

> In FIG. 3, one example among the template images stored in the template ROM 27 is illustrated. In FIG. 3, a template image 31 is constituted by a background image 32. A frame region or frame space 33 is located about an insertion region 34, into which an input image as principal image is inserted and recorded as a part of a synthesized image. It is to be noted that plural input images may be inserted into the template image 31. The background image 32, although preset in the thermal printer, may be an externally entered background image, and also may be selectable from a plurality of preset background images.
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> The insertion region 34, surrounded by the frame region 33, has a rectangular quadrilateral shape. The frame region 33 has a predetermined small width, and has a white color without coloring of any of the yellow, magenta and yellow. It is possible for the frame region 33 to be colored lightly. In other words, the frame region 33 may have a frame image where the small-width portion has a certain color at a small density. Frame region segments 33a of the frame region 33 are extended almost in the main scan direction, but with an inclination, and are non-parallel to the main scan direction. In the drawing, the broken lines indicate the parallelism to the main scan direction, with reference

to which the frame region segments 33a are inclined. The inclination is for the purpose of avoiding irregularities in a recorded density due to changes in the load in the conveyance. *It is to be noted that the inclination in FIG. 3 is depicted with exaggeration, and is considerably smaller than illustrated, in such a manner that users or viewers of the recording sheet 10 as a hard copy apparently recognizes the exactly horizontal orientation for the frame region segments 33a as if the frame region segments 33a were not inclined. Note that it is possible to provide the frame region segments 33a with a relatively great inclination for the purpose of appearance.*

Thus unevenness in the density in the printing is suppressed by use of the template image 31 with the frame region 33 non-parallel with the main scan direction. The portions of the frame region 33 extending in the sub scan direction are not correlated with changes in the load in the conveyance, and may be parallel to the sub scan direction or inclined.

The operation of the present embodiment is described now. **To print a synthesized image, at first the operation panel 28 is operated by a user to enter a signal for instructing synthesis of an image.** A desired one of the preset template images 31 is selected. **According to the selected template image, the image synthesis circuit 26 reads three-color template data of the yellow, magenta and cyan from the template ROM 27, and writes them to the work memory 29. Then the user operates the operation panel 28 and causes a main component of the thermal printer to obtain an input image or principal image.** The input image is subjected to photometry in the manner of three-color separation by means of a scanner or the like, so that three-color image data of the yellow, magenta and cyan are written to the input image memory 25.

Upon entry of a command signal for starting printing by operating the operation panel 28, the image synthesis circuit 26 reads three-color image data of the principal image from the input image memory 25, and writes the same to the work memory 29 at an address associated with the background image 32. In FIG. 4, synthesized image data is written to the work memory 29, and represents a synthesized image 42, which is a combination of the template image 31 and an input image 41 or principal image. In the synthesized image 42, the periphery of

the input image 41 is surrounded by the frame region 33. Borderlines between the input image 41 and the frame region segments 33a and between the background image 32 of the template image 31 and the frame region segments 33a are extended nearly in the main scan direction, but are exactly inclined with reference to the main scan direction.

When the image synthesis is finished, the recording sheet 10 is supplied from the supply cassette, moved between the platen roller 11 and the thermal head 12 at retracted position, and sent toward the feed roller set 15. When a front edge of the recording sheet 10 comes to the position of the feed roller set 15, the pinch roller 15b is shifted from the released position to the nip position, and nips the front edge of the recording sheet 10. A photo sensor (not shown) is disposed in the vicinity of the feed roller set 15, and detects whether or not the front edge of the recording sheet 10 has come to the position of the feed roller set 15.

When the feed roller set 15 nips the recording sheet 10, the thermal head 12 is moved to a press position. The ultraviolet lamp 20a is turned on. Then the stepping motor 16 rotates forwards upon supply of drive pulses at the constant frequency. The stepping motor 16 rotates the capstan roller 15a forwards, to convey the recording sheet 10 forwards at a constant speed.

A front edge of an effective recording region of the recording sheet 10 comes to the heating element array 12a of the thermal head 12. Then a first line of the synthesized image data of yellow is read from the work memory 29, and sent to the thermal head driver 14. The thermal head driver 14 drives the heating elements 13 of the thermal head 12 simultaneously at first, for application of bias heat energy for yellow to the recording sheet 10.

Then the thermal head driver 14 drives the heating elements 13 according to first yellow line data in the synthesized image data, for image heating. The heating elements 13 generate the image heat energy according to the yellow synthesized image data, and apply it to the recording sheet 10. If a pixel has the yellow synthesized image data of zero (0), then corresponding ones of the heating elements 13 are not driven, and generate no heat.

The heating elements 13 are colored at a density according to the synthesized image data of yellow on the condition of the coloring characteristic of the yellow coloring layer. Yellow dots are formed in the pixels PS to constitute the first yellow line. After the application of the image heat energy, the heating elements 13 are left to stand for the purpose of cooling.

During the cooling period, second yellow line data in the synthesized image data is read from the work memory 29, and sent to the thermal head driver 14. When a position in the recording sheet 10 for a second line reaches the heating element array 12a, the cooling period finishes. The second line starts being recorded. In a manner similar to the first line, the heating elements 13 are driven simultaneously for the bias heating. At the end of this, the heating elements 13 are selectively driven according to the synthesized image data for the second line of yellow, so that the image heat energy is applied in order to record the second line. Then a third line and succeeding lines are recorded for the synthesized image of yellow.

Portions of the recording sheet 10 with the yellow synthesized image recorded are moved to the position of the yellow fixer 20. Yellow fixing ultraviolet rays are emanated by the ultraviolet lamp 20a and fix the yellow coloring layer. After the recording of the final line of the yellow synthesized image, the recording sheet 10 are conveyed farther until the rear edge of the effective recording region is moved past the yellow fixer 20.

When a rear edge of the effective recording region is conveyed past the yellow fixer 20, then the ultraviolet lamp 20a is turned off. The stepping motor 16 is stopped provisionally. The thermal head 12 is swung to the retracted position. Then the stepping motor 16 is rotated backwards. The feed roller set 15 conveys the recording sheet 10 to an upstream position along the conveying path. During the conveyance, the front edge of the effective recording region reaches the position of the thermal head 12. Rotation of the feed roller set 15 is stopped. The thermal head 12 is swung to the press position. Furthermore, the ultraviolet lamp 21a is turned on.

After the thermal head 12 is set in the press position, the stepping motor 16 is rotated again in the forward direction, for the feed

roller set 15 to convey the recording sheet 10 forwards along the conveying path. In the course of the conveyance, the heating element array 12a applies magenta bias heat energy and magenta image heat energy to the recording sheet 10, and records a magenta synthesized image one line after another. In the magenta image heating, the heating elements 13 are selectively driven according to the synthesized image data of magenta read from the work memory 29 one line after another.

The portion of the recording sheet 10 with the magenta image recorded is subjected to magenta fixing ultraviolet rays from the ultraviolet lamp 21a. The magenta coloring layer is fixed optically.

The rear edge of the effective recording region is conveyed past the magenta fixer 21. The feed roller set 15 conveys the recording sheet 10 in the upstream direction in the manner the same as above. Then the recording sheet 10 is conveyed again forwards in the downstream direction. The heating element array 12a records the cyan synthesized image one line after another. The recording sheet 10 after recording the final cyan line is further conveyed, and ejected through the exit slot. (emphasis added).

The Office Action states (p. 9, item 9) that "However, Takayama et al. discloses a printer that allows a user to change the orientation of an electronic image using a control panel 28 with a template ROM 27 (Takayama et al., col. 7, lines 36-46)." (the sentences that include elements 27 and 28 are reproduced in **bold** for ready reference). Applicant finds no such teaching in the cited portions of the reference. Clarification of the rejection and more particularly of the interpretation of the teachings of the reference is respectfully requested.

Such is not equivalent to any "plot stream sending step" that "comprises the step of electronically switching the order **of said another plot stream**", as recited in claim 12, and further, Applicant finds no teaching or disclosure

whatsoever of such in the above-cited passage. Modification of a portion of a print job is not equivalent to switching the order of a plot stream. Clarification of the rejection is requested.

Takayama is concerned with printing of single sheets of letter-type paper 10 (see, e.g., Figs. 3-8 and accompanying text) and thus provides no teaching or disclosure relative to any "plot stream sending step" that "comprises the step of electronically switching the order of said another plot stream" in the context of rolled print media, as recited in claim 12.

In fact, Takayama is void of the terms "plot" or "plot stream". As such, it is inconceivable that Takayama could provide, or provide motivation for, the subject matter of claim 12. For at least these reasons, the rejection of claim 12 is in error and should be withdrawn, and claim 12 should be allowed.

Applicant notes the requirements of MPEP §2143.01, in a subsection entitled "THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE". This subsection states that "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) ...." Because modification of Hatta to include the teachings of Silverbrook defeats the intended purpose taught by Hatta, it is improper to combine the teachings of these references in an attempt to find unpatentability.

Applicant notes the requirements of MPEP §2143.01, entitled "Suggestion or Motivation To Modify the References." This MPEP portion includes a subsection stating that "THE PRIOR ART MUST SUGGEST THE DESIRABILITY OF THE CLAIMED INVENTION". Inasmuch as both prior art references are silent with respect to the problem to be solved, it is inconceivable that the references could suggest the desirability of the claimed invention.

Applicant further notes that, as there is no basis for the Examiner's contentions within the cited references, the only possible motivation for these contentions is hindsight reconstruction wherein the Examiner is utilizing Applicant's own disclosure to construct a reason for combining the cited references using an improper "obvious to try" standard for unpatentability.

The Examiner is reminded that hindsight reconstruction is not an appropriate basis for a §103 rejection. (See, e.g., *Interconnect Planning Corp. v. Feil*, 227 USPQ 543, 551 (Fed. Cir. 1985); *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990) (explaining that hindsight reconstruction is an improper basis for rejection of a claim).)

The impermissibility of the rationale given in the Office Action is also discussed in MPEP §2145(X)(B), entitled "Obvious To Try Rationale ". This MPEP section states that "An applicant may argue the examiner is applying an improper "obvious to try" rationale in support of an obviousness rejection."

This MPEP section further states that "The admonition that 'obvious to try' is not the standard under § 103 has been directed mainly at two kinds of

error. In some cases, what would have been 'obvious to try' would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful ...." The references cannot identify which parameters are critical if they do not recognize the problem to be solved, and they cannot provide direction as to which choices may succeed when they do not provide the elements recited in the claims.

This MPEP section also states that "In others, what was 'obvious to try' was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it." *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988)". Mere misrepresentation of the teachings of the references fails to elevate the arguments contained in the Office Action above such an "obvious to try" standard.

The Office Action fails to establish a prima facie case of obviousness. Applicant notes that criteria for such are set forth in MPEP §2143, entitled "Basic Requirements of a Prima Facie Case of Obviousness" (see also MPEP §706.02(j)).

This MPEP section states that "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." No motivation has been identified in references by the Office Action to modify or combine the reference disclosures.

This MPEP section also states that "Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." As noted above, the references fail to teach or suggest all of the recitations of the claims. As such, there can be no reasonable expectation of success.

This MPEP section further states that "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." As a result, the rejection fails all prongs of the test set forth in the MPEP for a prima facie finding of unpatentability.

Moreover, no evidence has been provided as to why it would be obvious to combine the teachings of these references. Evidence of a suggestion to combine may flow from the prior art references themselves, from the knowledge of one skilled in the art, or from the nature of the problem to be solved. However, this range of sources does not diminish the requirement for actual evidence. Further, the showing must be clear and particular. See *In re Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999).

Accordingly, (i) the references fail to provide the elements recited in Applicant's claims, (ii) the references have been mischaracterized in the Office Action, and have been improperly applied, (iii) the rejection fails to meet the standards set forth for finding unpatentability, (iv) the references teach away from one another, (v) the teachings of Hatta are rendered unsuitable for their intended purpose if modified as suggested in the Office Action or if combined with the teachings of Silverbrook, (vi) the rejection employs an improper "obvious to try" rationale and (vii) no evidence has been provided as to why it would be obvious to combine the teachings of these references. Accordingly, the unpatentability rejection of claims 1 and 10 and claims dependent therefrom is improper and should be withdrawn, and claims 1-25 and 28 should be allowed.

Examination Deficiencies:

Additionally, the Examiner's response to argument is deficient in multiple regards. A first deficiency is that the response to argument clearly fails to respond to all of Applicant's arguments with respect to the rejections under 35 U.S.C. §103, or, in the alternative, is an admission that these rejections are defective.

The Office Action states (p. 12, item 14) that "Regarding claim 1, while applicant recites "removing roll-set curl in the preamble of the claim, applicant has not recited any steps that achieve this purpose in the body of the claim."

Only two paragraphs of Applicant's Response address the recitation of removal of roll set curl as recited in claim 1. The acts recited in claim 1 are directed to a method of removing roll set curl; taken together, such acts result in substantial removal of roll set curl. The Examiner has offered no authority for the opinion that the claims must include explicit recitation of an act of removal of roll set curl. Furthermore, 35 U.S.C. §103(a) provide that the subject matter as a whole must be considered in determining patentability.

The Office Action provides no appropriate legal basis for ignoring this aspect of the patent statutes and instead merely states (p. 12) that "[w]hile this limitation is not explicitly recited in the references, it appears that such as step would be required in order to achieve the printer and print medium arrangement shown in the Figures of Silverbrook et al." Applicant notes the variety of approaches to printing represented in the references that the Examiner has chosen to apply and respectfully notes that such, in and of itself, provides cognitive dissonance in contemplation of the opinion offered in the Office Action with respect to what might apparently be required by the teachings of Silverbrook.

In the event that the Examiner is of the opinion that such might be "inherent", Applicant notes that inherency is a doctrine relating to results, characteristics or characteristics and is not a basis for ignoring affirmatively-recited subject matter in Applicant's claims. This is discussed below in more detail with reference to MPEP §2112, entitled "Requirements of Rejection Based on Inherency; Burden".

In a subsection entitled "EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY", this MPEP section states that "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993)(reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981).

This MPEP subsection further states that "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)." Accordingly, substitution or addition of claimed elements as being inherent is inappropriate in attempting to make a finding of unpatentability.

Claim 10 and claims dependent therefrom are directed to "a method of printing on both sides of a print medium rolled on a core ...." These claims do not include any recitation of removing roll curl and the arguments with respect to these claims are similarly devoid of discussion of removing of roll curl.

The Office Action states (p. 12) that "[t]the examiner disagrees with applicant's assertion that Hatta does not teach printing on both sides of the roll sheet 4." and that "Applicant's attention is invited to the beginning of paragraph 9 of the machine translation which includes the heading "Problem(s) to be Solved by the Invention." Such provides no clue as to how Hatta might or might not solve any problem.

The Office Action states (p. 13) that "Applicant's attention is further invited to the last two sentences of paragraph 19 of the machine translation which states, "as for the roll sheet 4 rolled round by the take-up spool 6, the outside field is in the state of a blank paper. For this reason, it becomes possible to use it again, setting to the form electrode holder 5 of the roll sheet 4 removed from the take-up spool 6."

Such does not inform one if Hatta intends to print on the same side but at a different angle, much as vellum was "recycled" in the Middle Ages, or if Hatta has other thoughts on the subject. It is abundantly clear that no teaching regarding roll-curl are found in Hatta. The cited portions simply fail to communicate any coherent plan of action with respect to the problem Applicant is solving, or, for that matter, that Hatta might be attempting to solve. As a result, the opinions offered in the Office Action are wide of the mark and fall short of establishing the validity of the unpatentability rejections.

The Examiner has not provided any meaningful response to Applicant's arguments with respect to claim 10. The Examiner is reminded that the Examiner has an obligation to respond to Applicant's arguments in the event that the Examiner continues to reject such claim based on the same references and analysis. Clarification is requested.

This obligation is described below in more detail with reference to the requirements of MPEP §707.07(f), entitled "Answer All Material Traversed".

This MPEP section states that "Where the requirements are traversed, or suspension thereof requested, the examiner should make proper reference thereto in his or her action on the amendment. Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it."

Applicant notes that this is explained further by the requirements of MPEP §707.07, entitled "Completeness and Clarity of Examiner's Action". This MPEP section cites 37 CFR §1.104, entitled "Nature of examination" which in turn states, in subsection (b), entitled "Completeness of examiner's action" that "The examiner's action will be complete as to all matters, except that in appropriate circumstances, such as misjoinder of invention, fundamental defects in the application, and the like, the action of the examiner may be limited to such matters before further action is made."

This MPEP section further states, under a heading labeled "Examiner Note" that "The Examiner must, however, address any arguments presented by the applicant which are still relevant to any references being applied."

Applicant has provided at least seven (7) different legal arguments traversing the unpatentability rejections. In the event that the Examiner continues to reject Applicant's claims by applying the same references, the Examiner should affirmatively respond to each of the legal arguments set forth by Applicant. The Office Action clearly fails to comport with these requirements as set forth in the MPEP, at least because the Office Action both fails to address Applicant's arguments with respect to unpatentability and continues to reject claims as being unpatentable.

A second deficiency is that under the unpatentability rejections, the combinations fail to provide all of the features recited in any of Applicant's

independent claims. The Examiner has ignored these features without providing any appropriate legal basis for doing so.

Merely repeating that "it would be obvious" to provide the features recited in the claims does not constitute a basis for rejection of the claims, particularly when the reference fails to provide the features recited in the claims and the rejections fail to meet the standards for such rejections as set forth in the MPEP and as demonstrated by Applicant.

For at least these reasons, the Office Action fails to comport with appropriate standards for examination. The Examiner should either allow Applicant's claims or provide a meaningful basis for rejection and an appropriate response to Applicant's arguments.

Conclusion:

Claims 1-44 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. Should any matter in this case remain unresolved, the undersigned attorney respectfully requests a telephone conference with the Examiner to resolve any such outstanding matter.

Respectfully Submitted,

Date: Feb. 4, 2004

By _____
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